

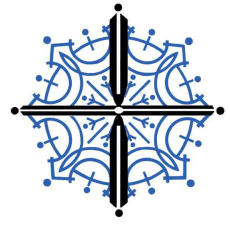
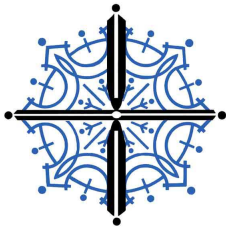
Spot Welding Data Low Carbon Steel

Low carbon/mild steels are the most commonly welded materials. A satisfactory weld can be achieved over a wide range of time, current and force.

Thickness	Gauge	Tip Face	Tip Pressure	Weld Current	Weld Time	Edge Overlap	Weld Space
.010"	30	1/8"	200	4,000	2	3/8"	1/4"
.021"	25	3/16"	300	6,500	4	7/16"	3/8"
.031"	22	3/16"	400	8,000	5	7/16"	1/2"
.040"	20	1/4"	500	8,800	6	1/2"	3/4"
.050"	18	1/4"	650	9,600	8	9/16"	7/8"
.062"	16	1/4"	800	10,600	10	5/8"	1"
.078"	14	5/16"	1,100	11,800	13	11/16"	1 1/4"
.094"	13	5/16"	1,300	13,000	15	3/4"	1 1/2"
.109"	12	3/8"	1,600	14,200	18	13/16"	1 5/8"
.125"	11	3/8"	1,800	15,600	20	7/8"	1 3/4"

Machine Recommendations: Rocker or Press type, air operated. Press type is required for very thick material or when welding Medium Carbon or High Carbon-Low Alloy steels.

Electrode Recommendation: Class 2.



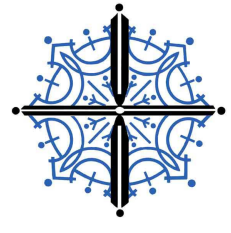
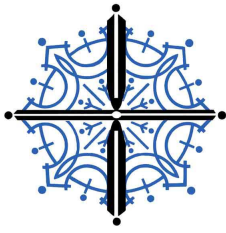
Spot Welding Data Stainless Steel

Stainless steel has good electrical and thermal resistance and requires low welding current. Higher weld forces are needed compared to other materials. Excessive heat and weld times should be avoided.

Thickness	Gauge	Tip Face	Tip Pressure	Weld Current	Weld Time	Edge Overlap	Weld Space
.010"	32	1/8"	230	2,000	1	3/16"	3/16"
.016"	28	1/8"	330	3,000	2	1/4"	1/4"
.022"	26	5/32"	400	3,200	2	5/16"	5/16"
.031"	22	3/16"	650	4,800	3	3/8"	1/2"
.040"	20	3/16"	900	6,300	4	7/16"	5/8"
.050"	18	1/4"	1,200	7,500	6	1/2"	3/4"
.062"	16	1/4"	1,500	9,000	7	5/8"	1"
.094"	15	5/16"	2,400	12,700	12	3/4"	1 3/8"
.109"	12	3/8"	2,800	14,000	14	13/16"	1 1/2"
.125"	11	3/8"	3,200	15,000	17	7/8"	2"

Machine Recommendations: Rocker or Press type, air operation required with careful consideration of tip pressure developed by the air cylinder in each model of welder.

Electrode Recommendation: Class 2 or Class 3.



Spot Welding Data Galvanized Steel

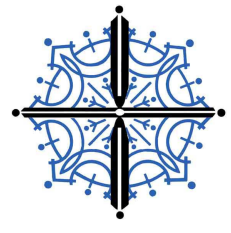
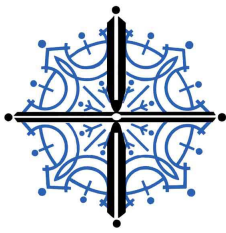
Galvanized steel sheet is available in various base metal compositions, coating types and surface treatments. Compared to uncoated steel, more frequent dressing of the electrodes is required. This is to maintain the proper shape of the electrode and to help reduce coating pickup by the electrodes.

Thickness	Gauge	Tip Face	Tip Pressure	Weld Current	Weld Time	Edge Overlap	Weld Space
.022"	26	3/16"	310	8,800	6	7/16"	3/8"
.031"	22	3/16"	450	9,500	7	7/16"	1/2"
.036"	21	3/16"	550	11,000	9	1/2"	3/4"
.051"	18	7/32"	800	14,000	12	9/16"	7/8"
.064"	16	1/4"	1,050	15,500	15	5/8"	1 1/16"
.078"	14	5/16"	1,350	19,500	18	11/16"	1 3/8"
.093"	13	11/32"	1,700	23,000	22	3/4"	1 5/8"
.108"	12	11/32"	2,200	26,000	25	13/16"	1 13/16"
.123"	11	13/32"	2,500	28,000	28	7/8"	2"
.138"	10	7/16"	3,000	31,000	33	1 1/8"	2 1/4"

****NOTE:** Weld times are with Up Slope included.

Machine Recommendations: Rocker or Press type, air operated.

Electrode Recommendation: Class 2 Zirconium or Aluminum-Oxide Dispersion-Strengthened Copper (Glidcop).



Spot Welding Data Aluminum and Aluminum Alloys (Commercial Use)

Most aluminum and aluminum alloys are good conductors of electricity and dissipate heat rapidly. Therefore, they require higher output current and lower force compared to other materials. Relatively short weld times and precise timing are important, due to aluminum's narrow plastic range. A forging force may be required to remove cracks and porosity.

The proper choice of electrode shape and the maintenance of the shape in production are essential to obtain consistent spot welds on aluminum.

Thickness	Gauge	Diam.	Suggested Radius	Tip Pressure	Weld Current	Edge Overlap	Weld Space
.016"	26	5/8"	4"	200	14,000	1/16"	3/8"
.020"	24	5/8"	4"	300	16,000	3/16"	3/8"
.025"	22	5/8"	4"	390	17,000	7/32"	3/8"
.032"	20	5/8"	4"	400	18,000	1/4"	1/2"
.040"	18	5/8"	6"	450	20,000	1/4"	1/2"
.050"	16	5/8"	6"	500	22,000	5/16"	5/8"
.063"	14	5/8"	8"	550	24,000	3/8"	5/8"
.080"	12	7/8"	8"	600	28,000	3/8"	3/4"
.090"	11	7/8"	8"	700	30,000	7/16"	7/8"
.102"	10	7/8"	10"	800	32,000	7/16"	1"
.128"	8	7/8"	10"	800	35,000	1/2"	1 1/4"

Machine Recommendations: Press type, air operated, low-friction roller ram for quick follow-up.

Electrode Recommendation: Class 1 Zirconium.